



## **HOW PHYSICAL ACTIVITY AFFECTS MANAGEMENT SKILLS AND LEADERSHIP? A QUALITATIVE STUDY OF RETIRED CROATIAN NAVY SEAFARERS**

**Bepo Žura<sup>1,2\*</sup>, Antea Šipalo Lilić<sup>1,3</sup>, Luka Androja<sup>4</sup>**

**Abstract.** In the navy sector, a significant challenge is limited access to physical activities and maintaining regular training routines due to restricted resources and confined ship environments. This affects seafarers' physical fitness and leadership effectiveness, underscoring the need for tailored physical regimes. Regarding that, this article explores the role of physical activities in the development of managerial skills and leadership among the members of the Croatian Navy. Given the challenges and demands of the specific maritime and military environment, the aim of this study was to examine how physical fitness, and regular physical activities influence decision-making abilities, team management, and coping with stressful situations. A qualitative method, specifically in-depth interviews, was used to conduct the research, involving several retired senior officers and managers within the Croatian Navy. The interviews provided detailed insights into the personal experiences, views, and beliefs of the participants regarding the importance of physical health in the context of leadership and management, as well as the connection between physical activity and the enhancement of leadership and managerial skills. The connection between physical activities and leadership demonstrates how physical fitness can be a key factor in successful leadership and management under challenging conditions. This article can serve maritime professionals and policymakers as it provides information on the importance of physical fitness and leadership effectiveness among seafarers.

**Keywords:** Physical Activity; Physical Fitness; Management; Leadership; Navy; Seafarer.

<sup>1</sup> Aspira University of Applied Sciences, Mike Tripala 6, Split, Croatia

<sup>2</sup> University of Split, Faculty of Economics, Business and Tourism, Cvite Fiskovića 5, 21000, Split, Croatia

<sup>3</sup> University of Split, Faculty of Kinesiology, Teslina 6, Split, Croatia

<sup>4</sup> University of Split, Faculty of Maritime Studies, Ruđera Boškovića 37, Split, Croatia

\* **Corresponding author:**  
[bepo.zura@gmail.com](mailto:bepo.zura@gmail.com)

## 1. INTRODUCTION

The maritime domain, particularly within naval operations, demands a unique blend of physical robustness, technical expertise, and astute management and leadership capabilities (Luttenberg & Rukavina, 2013). The demanding nature of seafaring requires personnel to operate advanced equipment and endure long, often stressful and unpredictable periods at sea (Ma & Hou, 2021). In this context, physical fitness emerges as a crucial factor, closely intertwined with cognitive function, decision-making prowess, and leadership effectiveness (Uğurlu et al., 2015). The Croatian Navy, like its global counterparts, recognizes the importance of developing seafarers holistically, acknowledging that physical and mental resilience are essential for maintaining operational readiness and ensuring mission success (Lengnick-Hall et al., 2010). Moreover, the hierarchical structure inherent in naval organizations underscores the significance of leadership at all levels—from junior officers to seasoned commanders. Effective leadership fosters cohesion, discipline, and unity, especially in high-stakes scenarios. Therefore, understanding how physical activity (PA) influences both management and leadership skills is of paramount importance in the naval context. This study seeks to investigate the multifaceted relationship between PA, management skills, and leadership qualities among Croatian Navy seafarers.

Regarding that, the aim of this study was to provide insights into how targeted physical training programs enhanced individual performance and organizational effectiveness. By examining this interplay, the research endeavors to identify strategies for optimizing training regimens, fostering leadership development, and ultimately strengthening the operational capabilities of the Croatian Navy (Dermawan, 2021). The study is important as it demonstrates that focused physical training programs boost employees' health, decrease the risk of injuries, and increase productivity at work. These advantages contribute to greater job satisfaction and help organizations reduce expenses associated with employee absenteeism.

## 2. THEORETICAL BACKGROUND

### 2.1. Contemporary Challenges in Maritime Education and Training

The maritime industry, a cornerstone of global trade and transportation, relies heavily on the competence and professionalism of its seafarers (Phanphichit & Bartusevičienė, 2024). The quality of maritime education and training systems is therefore paramount for ensuring safe and efficient shipping operations

(Čampara et al., 2017). However, the standards for awarding vocational and academic competence differ among states, and the mutual recognition of professional education does not always guarantee a standardized level of training for all seafarers (Luttenberg & Rukavina, 2013). Traditional seafarer training has typically emphasized applied science, focusing on practical and cognitive skills necessary for daily operations at sea, while contemporary training has evolved to incorporate academic competencies that enable officers to effectively utilize increasingly sophisticated technology (Demirel, 2020). Yet, the integration of technology into maritime systems has progressed more rapidly than the corresponding advancements in training methodologies, creating a gap between operational demands and educational readiness (Nazir et al., 2015). This growing complexity of modern seafaring necessitates the continuous evolution of training programs to ensure that seafarers are equipped with the skills and knowledge required to navigate the dynamic challenges of the 21st-century maritime landscape. As digital systems increasingly dominate navigation, communication, and operational control, seafarers must now acquire advanced technological proficiencies that extend far beyond traditional seafaring competencies.

### 2.2. Physical Activity

PA has long been recognized as a cornerstone of overall health and well-being, with extensive research demonstrating its positive effects on cardiovascular health, metabolic function, and musculoskeletal strength (Kohl et al., 2013). However, its benefits extend far beyond physical conditioning, significantly influencing cognitive function, emotional regulation, and leadership effectiveness. Studies have shown that regular exercise can enhance cognitive abilities such as attention span, memory, and executive function, all of which are crucial for effective decision-making and problem-solving in demanding environments (Demirel, 2020). Furthermore, PA has been linked to improved mood, reduced stress levels, and increased self-esteem, fostering a more resilient and positive mindset essential for leadership roles. In the context of management, PA contributes to enhanced productivity, better teamwork, and reduced absenteeism (Pipchenko & Kovtunen, 2020). Leaders who prioritize their own physical well-being often serve as role models, promoting a culture of health and wellness that can positively impact organizational performance. These benefits are especially relevant in environments that demand both physical endurance and psychological resilience, such as maritime operations. Modern seafaring presents a convergence of stressors, including prolonged social isolation

during extended voyages, constant exposure to unpredictable and often severe weather conditions, and the ongoing awareness of potential critical incidents—all of which can lead to elevated occupational stress (Hetherington et al., 2006). Within this context, PA becomes a vital tool for maintaining seafarers' mental and physical readiness. However, the promotion of PA in the maritime industry faces significant challenges due to the inherent constraints of shipboard life, including limited space, irregular schedules, long working hours, and restricted access to conventional exercise facilities. These conditions contribute to fatigue and hinder the ability to maintain consistent exercise routines (Pia et al., 2024). Additionally, limited availability of fresh and nutritious food further complicates efforts to sustain optimal health and fitness at sea. Despite these obstacles, integrating PA into daily life remains essential for safeguarding the health, well-being, and operational effectiveness of seafarers, particularly within the high-stakes environment of the Croatian Navy (Whitfield & Wilby, 2021). Work posture can significantly affect physical activity and health, with prolonged sitting and standing posing different health risks, making it necessary to regularly change positions and move to reduce negative effects (Arca, Durmaz & Türken, 2023). Considering the jobs in the navy, postures vary significantly and can influence physical fitness as well as the time available for attending training programs.

### 2.3. Management Skills and Leadership in Maritime Industry

Management skills encompass a broad range of competencies that enable individuals to effectively plan, organize, direct, and control resources in pursuit of organizational goals. These skills are not merely theoretical constructs but practical instruments that empower managers to address the complex challenges of organizational life, allocate resources efficiently, and guide performance toward strategic objectives (Liseanu, 2023). Effective management includes the ability to set clear goals, develop strategic plans, delegate responsibilities, motivate employees, and cultivate a culture of accountability and continuous improvement (Praetorius et al., 2020; Jiang, 2024). In today's rapidly changing operational environments, such skills are crucial for sustaining competitiveness and ensuring long-term success. Central to effective management is strategic planning, which involves the formulation of long-term objectives and comprehensive action plans based on environmental assessments, internal analyses, and careful resource allocation (Abdul-Rahim et al., 2025; Jun & Noh, 2023). Strategic leaders proactively anticipate chal-

lenges, assess risks, and design innovative responses that enable organizations to navigate uncertainty and seize emerging opportunities (Schoemaker & Krupp, 2015; Zhabin, 2023). Alongside these technical dimensions, time management and employee satisfaction are equally vital, contributing to a more efficient and resilient organization (Ibrahim & Erdoğan, 2024; Campbell et al., 2020). In contrast yet closely connected, leadership represents the capacity to inspire and influence others toward the achievement of shared goals. Leadership is a dynamic and multifaceted construct that demands emotional intelligence, ethical judgment, and the ability to adapt to situational demands while fostering collaboration and trust within teams (Balon, 2014; Brusher, 2007; Kim & Gausdal, 2020). Effective leaders must not only articulate a compelling vision and manage conflict under pressure, but also create developmental opportunities for their personnel, especially in complex and high-stakes environments such as the maritime domain. Within the Croatian Navy, leadership entails a unique combination of operational expertise, interpersonal skill, and psychological resilience (Materová et al., 2023; Boström & Österman, 2022). Naval leaders must build cohesive units, enforce strict discipline, and uphold a strong safety culture while operating in unpredictable and demanding conditions. Their ability to make swift decisions, communicate clearly under duress, and inspire confidence among subordinates is essential for mission success (Brown, 2007). The cultivation of "mission-based leadership" serves to enhance adaptability in the face of uncertainty and ensure preparedness for future challenges through training, mentorship, and professional development (Steiro & Torgersen, 2020).

Additionally, recent studies have been enhanced the assessment of cognitive skills critical for effective decision-making in high-stress occupations (Cristofaro, Giannetti & Massaro, 2022; Li, Zhang & Cheng, 2025), which definitely include naval personnel. Taken together, the intersection of management skills, leadership capacity, and the role of physical and mental resilience represents a critical area of investigation—particularly in the operational context of the Croatian Navy, where performance under pressure is non-negotiable.

### 2.4. Literature Review

The investigation into the effects of PA on executive functions has unveiled a spectrum of benefits across various PA types, highlighting the potential for improved cognitive control and decision-making processes (Medina-Cascales et al., 2019). This exploration aims to consolidate the findings on how PA influences management skills and leadership quali-

ties, specifically within the unique context of Croatian Navy seafarers (ÇAKALOĞLU, 2018). The scope encompasses a review of existing literature that examines the correlation between PA and leadership attributes, offering a detailed perspective on the underlying mechanisms through which PA may enhance cognitive and physical capabilities relevant to leadership and management (Phillips et al., 2014). The exploration of PA's role in the development of management skills begins with an examination of its effects on cognitive functions, particularly executive control, which is crucial for effective management (Stuart, 2021). PA has been identified as a catalyst for cognitive enhancement, promoting improvements in memory, attention, and processing speed—abilities that are fundamental to sound decision-making and strategic planning in management roles (Álvarez-Bueno et al., 2016). Studies have demonstrated that regular physical exercise can lead to structural and functional changes in the brain, particularly in areas associated with executive functions such as the prefrontal cortex (Marmeleira, 2012). These changes are thought to enhance cognitive flexibility, enabling individuals to adapt to changing circumstances and manage complex tasks more efficiently (Wunder & Staines, 2022). The impact of PA extends beyond cognitive benefits, also influencing emotional regulation and stress management, both of which are critical in high-pressure management environments. The ability to manage stress, maintain composure, and make rational decisions under pressure are hallmarks of effective leadership, and PA provides a means to cultivate these skills (Zimmer et al., 2020). Furthermore, collaborative physical activities, such as team sports or group fitness regimens, serve as incubators for essential management skills, offering practical experience in collaboration, strategic communication, and conflict resolution, all of which are indispensable for effective team management (Esa et al., 2015). Engaging in regular PA contributes to improved physical health, which, in turn, enhances overall well-being and reduces absenteeism due to illness, promoting consistent performance and reliability in management roles. The impact of PA on cognitive performance is multifaceted, with research suggesting that exercise can enhance neuroplasticity, the brain's ability to reorganize itself by forming new neural connections throughout life (Cabral et al., 2019). This plasticity is crucial for learning and adaptation, allowing managers to stay abreast of industry changes, acquire new skills, and innovate effectively. Furthermore, PA has been shown to increase levels of brain-derived neurotrophic factors, a protein that supports the survival, growth, and differentiation of

neurons (Lee et al., 2019). This neurotrophic factor plays a key role in memory and learning, facilitating the acquisition of new knowledge and the retention of critical information. Regular engagement in PA can significantly mitigate the risks associated with chronic diseases known to impair cognitive functions, such as cardiovascular ailments, type 2 diabetes, and obesity, thereby ensuring the maintenance of optimal cerebral blood flow and safeguarding neural integrity (Kohl et al., 2013). These protective effects are particularly relevant for individuals in management positions, where sustained cognitive performance is essential for effective decision-making and strategic oversight (Macon, 2020). Moving beyond the direct benefits to cognitive and physical health, consistent participation in physical activities fosters the development of critical psychological attributes essential for effective management, including enhanced resilience under pressure, heightened emotional intelligence for interpersonal interactions, and improved proactive problem-solving capabilities in dynamic work environments. The structured nature of regular physical exercise also significantly contributes to the development of essential time management skills; adhering to a consistent workout schedule cultivates discipline and enhances the ability to prioritize tasks, set realistic deadlines, and efficiently allocate time, translating into improved organizational capabilities and managerial effectiveness. The synthesis of evidence suggests that regular PA is linked to enhanced self-esteem and self-efficacy, both of which are fundamental to effective leadership (Whitfield & Wilby, 2021). Leaders who possess robust self-esteem are more likely to initiate action, exhibit decisive judgment in critical situations, and foster an environment characterized by trust and assurance among team members; concurrently, a pronounced sense of self-efficacy equips leaders with the resilience to overcome challenges, confidently pursue ambitious goals, and inspire others to exceed their perceived limitations. Additionally, PA serves as a means of stress reduction, offering leaders a mechanism to cope with the demands and pressures inherent in their roles. Leaders capable of effectively managing stress are better positioned to maintain composure in high-stakes scenarios, make rational decisions under pressure, and provide steadfast support to their teams, thereby promoting a more stable and productive work environment (Onan et al., 2025). The structured engagement in physical activities, especially those involving team dynamics, inherently promotes the refinement of interpersonal skills that are indispensable for effective leadership (Voelker, 2016).

### 3. MATERIALS AND METHODS

#### 3.1. Study Design and Participants

The study was conducted using a qualitative approach aimed at gaining a deeper understanding of the subjective experiences of retired high-ranking members of the Croatian Navy (HRM). The sample consisted of participants (N = 3) of varying ranks, including officer, non-commissioned officer, and sailor, all of whom were retired and selected through purposive sampling (Palinkas et al., 2015). This sampling method is recognized in the literature as appropriate for selecting knowledgeable participants with direct experience of the phenomenon under investigation.

Regarding previous study, data was collected through semi-structured interviews, allowing for a combination of pre-determined questions and the flexibility to follow up on participants' responses (DeJonckheere & Vaughn, 2019). The interviews were audio-recorded with informed consent, transcribed verbatim, and anonymized to protect participants' privacy. Data was analyzed using thematic analysis following the approach of Braun and Clarke (2006), which involves a multi-phase process: familiarization with the data, initial coding, identification and naming of themes, and the integration and interpretation

of findings. The theoretical framework of the study is based on the intersection of physical fitness, leadership styles, and managerial skills. According to the "leadership fitness" model, core attributes of effective leadership—strength, endurance, flexibility, and balance—are metaphorically aligned with dimensions of physical fitness (Belcher, 2024). It is posited that the development of physical fitness contributes to greater psychophysical resilience and effectiveness in managerial contexts. This assumption is supported by prior research indicating a positive relationship between regular PA and improved cognitive function and stress resilience (Center for Creative Leadership, 2022).

#### 3.2. Measuring Instrument

The interview included questions regarding participants' physical exercise habits, their perception of the impact of physical fitness on daily effectiveness, stress levels, and approaches to managing personnel. The responses collected serve as a qualitative contribution to the analysis of the relationship between physical readiness and leadership competencies within a military context. The questionnaire administered to the participants encompassed the following questions and thematic areas:

#### 1. Could you briefly describe your rank, position, and a typical description of your duties?

##### Participant 1:

*"I hold the rank of Brigadier, and my most recent position was Chief of the Operations Department at the Coast Guard Command. The role was operational in nature and involved planning, implementation, management, and the preparation of orders and plans within the Croatian Navy."*

##### Participant 2:

*"I hold the rank of Navy Captain and currently serve as Head of the M3 Department within the Operations Division of the Croatian Navy Command."*

##### Participant 3:

*"I hold the rank of Major and serve as the Commander of the Medical Platoon at the Croatian Navy Maritime Logistics Base (HRM PLOV). I am responsible for leading and managing the medical, pharmaceutical, and dental services; conducting hygiene and epidemiological inspections of food facilities and dining establishments; and coordinating the operational deployment of medical teams in support of military-tactical exercises."*

#### 2. What forms of physical activity did you engage in, and how frequently?

##### Participant 1:

*"I engaged in gym workouts, running (mainly around the football field), and swimming. Due to professional obligations, I was not physically active on a regular basis, but I took every opportunity to exercise whenever possible. Physical activity was considered an individual responsibility, although all personnel were required to undergo an annual physical fitness assessment based on standardized tests that had to be passed."*

##### Participant 2:

*"Before assuming my position at the command level, we used to run and perform exercises such as sit-ups and push-ups three times per week. However, after my promotion in rank, I no longer had sufficient time for regular physical activity."*

##### Participant 3:

*"I practiced running and physical exercise three times a week, which marked the beginning of my workday."*



### 3. In what way (if at all) did you feel physical activity influenced your efficiency during the workday?

**Participant 1:**

*"Physical activity did not significantly affect my daily work efficiency, but I believe it plays an extremely important role in stressful situations and holds an important place in tasks within the Croatian Navy."*

**Participant 2:**

*"Physical activity did not significantly impact my work efficiency, but it helped me relax and relieve stress."*

**Participant 3:**

*"At the beginning of the workday, I felt more fulfilled and physically prepared."*

### 4. How did your physical condition affect your stress levels and ability to manage pressure?

**Participant 1:**

*"My job was not particularly stressful, but physical activity helped me relax and unwind."*

**Participant 2:**

*"I believe physical activity did not have a significant effect on my stress level and ability to handle pressure, as my physical fitness was always at a high level. My mental state and ability to protect myself through developed mental resilience had more influence on stress and efficiency."*

**Participant 3:**

*"Physical fitness greatly helped me cope with the stress that came with my position. It relieved me mentally and enabled easier decision-making under less psychological pressure."*

### 5. How would you describe the relationship between your physical fitness and the way you communicated, motivated, and built trust with your crew?

**Participant 1:**

*"I believe mental readiness is more important than physical when it comes to relationships with subordinates. However, a physically fit person usually feels more confident, which can contribute to greater authority among employees."*

**Participant 2:**

*"In my opinion, it is always beneficial when you can 'show up'—especially if you are in better physical condition than your subordinates. This not only builds authority but also encourages motivation in others. My physical fitness contributed to my high self-confidence."*

**Participant 3:**

*"Physical activity made me more satisfied and happier, which reflected on my behavior. I communicated more relaxed with subordinates, felt less anxiety at work, and had additional motivation. All this contributed to stronger mutual trust within the team."*

### 6. In what way did physical fitness shape your leadership style—did you feel you served as a role model to others?

**Participant 1:**

*"I believe physical fitness did not influence my leadership style."*

**Participant 2:**

*"Physical fitness did not directly shape my leadership style, but I always wanted to do everything properly—including taking care of physical fitness—and I tried to pass that approach on to my subordinates."*

**Participant 3:**

*"Physical activity helped me develop an authoritative leadership style, and I believe I positively influenced others by example—especially as a woman in that role."*

### 7. What were the biggest obstacles to regular physical activity in your service?

**Participant 1:**

*"The biggest obstacle was professional obligations. Due to the dynamic nature of the job and frequent field engagements, I did not have the opportunity to regularly practice physical activity."*

**Participant 2:**

*"The biggest obstacles were the demands of my position. I was always on standby and did not have a precisely determined free time that I could use for physical activity."*

**Participant 3:**

*"The biggest obstacles were the workload and fieldwork, which consequently reduced free time."*

**8. Were there resources or measures within the Croatian Navy that helped (or could help) you stay active?**

**Participant 1:**

*"Absolutely—we had access to a gym, a room for table tennis, football, volleyball, and basketball courts, as well as opportunities to practice water sports such as swimming."*

**Participant 2:**

*"Of course, we had well-organized guided physical activities with the presence of kinesiologists. We also had infrastructure that allowed us to exercise freely, participate in various sports, and occasionally organized sports competitions."*

**Participant 3:**

*"We had requirements to meet physical norms to continue working in the appropriate position. We also had access to gym facilities, sports courts for various sports, and opportunities for water sports such as swimming."*

**9. What advice would you give to junior officers who are developing their leadership style regarding physical activity?**

**Participant 1:**

*"I believe physical activity is one of the key elements, not only for Croatian Navy personnel but for all young people. For members of the Croatian Navy, knowledge and skills are most important, but they also heavily depend on physical fitness. A physically active person can more easily be a role model to others and effectively manage a crew or system."*

**Participant 2:**

*"A person feels significantly better when physically active, and physical activity greatly assists in performing tasks that require a certain level of physical fitness."*

**Participant 3:**

*"I would recommend introducing a fixed time for daily physical exercise without exceptions. Physical activity plays a crucial role in jobs of this nature and should be an integral part of the workday."*

### 3.3. Trustworthiness and Validity

To ensure the integrity and robustness of our research, we adopted a multifaceted approach to validation, drawing upon established criteria within the qualitative research paradigm (McBrien, 2008). Our validation strategy was guided by the principle of selecting criteria that were most germane to our specific research question and the nature of the data that emerged throughout the study (Im et al., 2023). In line with this principle, we prioritized authenticity as a cornerstone of our validation process, emphasizing the acknowledgement and mitigation of researcher biases at every stage of the investigation (Sargeant, 2012). This was achieved through a process of critical self-reflection, wherein we meticulously examined our own assumptions, preconceptions, and potential influences on the interpretation of the data (Johnson et al., 2020). To further enhance the authenticity of our findings, we enlisted the expertise of a critical friend who possessed a deep understanding of the research domain and qualitative methodologies. This individual served as an independent reviewer, challenging our interpretations, questioning our analytical decisions, and scrutinizing our conclusions to ensure that they were firmly grounded in the data and free from undue bias (Indrašienė et al., 2023). This critical review was particularly emphasized following any instances of deductive reasoning, where we sought to apply pre-existing

theoretical frameworks to the data. Complementing the strategy of critical review, we implemented a member checking procedure to solicit feedback from participants regarding the accuracy and resonance of our interpretations. This involved sharing the emergent themes and dimensions with a subset of participants, inviting them to assess whether these constructs adequately captured their experiences and perspectives. The participants' feedback was carefully considered and incorporated into the analysis, contributing to the refinement and validation of our findings. In addition to authenticity, we recognized the importance of establishing credibility and rigor in our research. Credibility was enhanced by strategically selecting participants who possessed a wealth of knowledge and experience relevant to the research topic. Furthermore, to enhance the credibility and depth of the raw data, we deliberately sought to include participants from a diverse range of backgrounds and perspectives within the relevant field.

By including a wide range of perspectives, we were able to collect rich, nuanced data that provided a strong foundation for generating robust and credible findings. Prolonged engagement during the data collection process was also emphasized, allowing for the development of trust and rapport with participants, as well as a deeper understanding of the phenomenon under investigation (Bidabadi et al., 2016).

## 4. RESULTS AND DISCUSSION

Analysis of the Interviews Identified the Following Key Relationships Between Physical Activity, Leadership Styles, and Managerial Competencies:

### Stress and Physical Activity:

Participants reported that PA significantly reduces tension and stress. One participant noted that running or exercising after a demanding shift “clears the mind” and leads to a feeling of relaxation. These findings align with existing literature, which indicates that regular exercise promotes the release of endorphins and lowers cortisol levels, thereby alleviating anxiety and enhancing well-being (Center for Creative Leadership, 2022). Similarly, a military officer remarked: “When I am stressed, I go for a run and immediately feel better.” PA thus serves as a preventive measure against negative emotions and depressive states (Reed, 2020).

### Work Efficiency:

The interviews revealed that participants associate physical fitness with increased job performance. They reported heightened alertness, improved concentration, and greater energy for decision-making after exercising. These subjective impressions are consistent with research findings; for example, a study by the CCL demonstrated that physically fit managers receive significantly higher leadership ratings from their superiors and peers (Center for Creative Leadership, 2022). Furthermore, physically active employees in workplace settings tend to have lower absenteeism and higher productivity. Correspondingly, participants believed that regular exercise enhances mental clarity and thus improves their work efficiency (Johns Hopkins Bloomberg School of Public Health, 2023).

### Communication and Authority:

Analysis showed that physically active leaders more easily established communication and authority within their teams. Participants described situations where commanders or non-commissioned officers engaged in joint training—“leading from the front”—which elicited respect and motivation among subordinates. This supports the view that in military contexts, role models are often “those who are the most capable and physically fit” (Jones, 2021). In other words, leaders demonstrating high levels of physical preparedness achieve greater credibility; subordinates perceive them as exemplars and are more willing to follow their directives.

### Motivation and Team Cohesion:

Participants emphasized that group physical activities (e.g., morning workouts with the crew or team

sports) strengthen the sense of belonging and mutual support. They reported that overcoming challenges together during training builds trust, motivates crew members, and fosters healthy competition. These observations correspond with studies on team activities; for instance, research has shown that leaders who encourage social cohesion within groups increase participants’ motivation to consistently engage in exercise programs (Herens et al., 2015). In military environments, promoting joint physical training further reinforces team spirit, as confirmed by participants: “When we train together, we feel like a real team and lift each other up” (Herens et al., 2015).

### Leadership Styles:

Although not directly measurable, insights from the interviews suggest that PA may shape leadership style. Participants implicitly indicated that commanders who maintain physical fitness tend to adopt more motivational and participative approaches—observing that such leaders engage more actively with their teams and provide support, contrasting with stricter, authoritarian styles. These observations align with conclusions from leadership studies in exercise settings: groups respond better and enjoy activities more when the leader employs a positive, supportive style (Fox, Rejeski & Gauvin, 2000). The concept of leadership fitness further suggests a parallel qualities such as “strength” and “endurance” in a leader are reflected in their leadership approach and decision-making (Belcher, 2024).

The results obtained largely correspond with the findings from the reviewed literature. For example, research in the field of leadership development demonstrates that physically fit managers are consistently rated as more effective than their less active peers (Center for Creative Leadership, 2022). In the workplace context, sources indicate that active employees typically report higher productivity and fewer sick leaves (Johns Hopkins Bloomberg School of Public Health, 2023), which aligns with our participants’ perceptions of improved work concentration following physical exercise. The theory of leadership fitness also emphasizes that leaders should “train” their capacities (strength, flexibility, endurance) much like athletes do (Belcher, 2024). Our respondents recognize precisely this synergy—physical preparedness enhances the ability to cope with stress and enables leaders to energetically guide their subordinates. Furthermore, in military and sport-organizational contexts, it has been highlighted that joint PA’s foster team cohesion and mutual trust (Herens et al., 2015). For instance, the Air Force reports that exercising together strengthens camaraderie—a sense of belonging and shared goals among soldiers (Reed, 2020)—which



corresponds with our participants' testimonies regarding increased team spirit following PA. Specifically, within the context of the Croatian Navy, it is important to emphasize that the structure and culture are oriented towards physical fitness and discipline. Physical training is regular and mandatory, with leaders traditionally setting the example. Our findings suggest that in such an environment the expectation of physical readiness is further reinforced—the application of knowledge and skills gained through PA can directly impact mission success. A comparison with earlier studies shows that although many focus on civilian managers, the fundamental conclusions remain consistent: physically fit leaders are perceived as more credible and successful (Clark, 2019). Additionally, the concept of "mind-body balance" is emphasized in the literature—the physical and mental fitness complement each other (Belcher, 2024). Our findings thus confirm that maintaining a balance between PA and mental readiness is crucial for sustainable leadership effectiveness, which aligns with emerging concepts supporting leader resilience.

## **5. SUGGESTIONS FOR ENHANCING LEADERSHIP THROUGH PHYSICAL ACTIVITY**

The introduction of regular and structured PA programs into the daily schedule of the crew, such as short workouts throughout the day, helps maintain the energy and resilience of both leaders and subordinates (Center for Creative Leadership, 2022). Organizing joint sports or fitness activities for personnel further enhances mutual trust and team spirit (Herens et al., 2015). Educating leaders and management structures about the connection between physical fitness and leadership emphasizes the importance of "holistic fitness," both physical and mental, in the ability to manage effectively (Belcher, 2024). Special emphasis is placed on the need to balance physical readiness with mental health, as both aspects are complementary and contribute to the overall resilience of soldiers and leaders. As experts conclude, "regular exercise not only benefits personal health but also everyone in the workplace, making you a better leader" (Center for Creative Leadership, 2022).

## **6. STRENGTH AND LIMITATION OF THE STUDY**

Although the study involved only three retired senior members of the Croatian Navy, participants were purposefully chosen to represent a range of ranks (officer, non-commissioned officer, and sailor) with

substantial and varied experience. This targeted sampling ensures that the collected insights are detailed, well-informed, and reflective of important viewpoints within the naval sector. Additionally, the qualitative nature of the study focuses on gaining deep understanding rather than making broad statistical generalizations. The semi-structured interview format facilitated an in-depth exploration of the participants' personal experiences. While the research does not explicitly follow the Delphi method, it aligns with its core principle of gathering expert opinions to capture wider industry perspectives by selecting knowledgeable individuals. The agreement and thematic similarities among these experts provide a solid basis to draw conclusions about leadership fitness and managerial competencies in the naval environment. Therefore, the perspectives of these three experts offer meaningful and applicable insights relevant to the broader maritime and military management domains.

## **7. CONCLUSION**

This study contributes to understanding how regular PA within a military environment can strengthen managerial skills and leadership competencies. We have shown that participants perceive physical training not only as a means of improving health but also as a factor that reduces stress, increases focus, and builds team cohesion. With the aim of improving this research for authors who will investigate a similar or the same topic, we propose: sample expansion, include a larger number of participants from various ranks and specialties within the Croatian Navy, as well as other branches of the Croatian Armed Forces, to validate the findings on a broader and more diverse population. Qualitative research standards typically suggest 3–6 participants in phenomenological studies (Creswell, 2013), but a larger sample enhances the reliability of the results. Furthermore, quantitative validation, to develop and implement survey questionnaires or empirical measurements (e.g., cognitive function tests, work performance assessments, psychophysiological parameters) to statistically examine the relationship between levels of PA and leadership performance. Also, mixed methods approach: combine an in-depth qualitative approach (interviews/focus groups) with quantitative methods, enabling detailed exploration of the phenomenon alongside quantification of effects. This approach will provide more comprehensive understanding and helps verify the mechanisms of influence identified in this study. The results of this study can assist military professionals, trainers, leaders, and researchers in improving physical readiness and effective leadership within the armed forces.

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